

## ABSTRACT

A method and system for analytically and dynamically generating a repeatable digital probing signal representing an answer tone. The probing signal may conveniently be used by a modem to determine whether characteristics of the communication path between the modem and another end are sufficiently similar to these of a previous communication path, such that a shortened training sequence can be employed between two ends. When the modem initiates communication, the modem applies a predefined algorithm to dynamically generate a sequence of samples representing an answer tone signal. Next, the modem encodes the generated sequence of samples into a sequence of codewords and sends it to a second modem via a transmission path. When the second modem receives each codeword of the sequence, the second modem dynamically generates a respective codeword and compares it to the received codeword. Using the received sequence of codewords and the dynamically generated sequence of codewords, the second modem may determine whether a shortened training sequence may be employed.